



## Stilgebauer Award 2010 – Application Form

Please provide the information below. This application form needs to accompany the Project Summary for the project to be considered for a Stilgebauer award. Individuals or teams may complete the required information for their own project(s) or for another teacher or group's project

Project Name: <i>Scratch Club</i>	
School Regional Area	<input checked="" type="checkbox"/> North Cook <input type="checkbox"/> South Cook <input type="checkbox"/> West 40
District Name	<i>Northbrook</i>
District No.	<i>28</i>
Name(s)-Teams with up to 5 members will be accepted! Include all names.	
* <i>Mark Frye</i>	* <i>mfrye@northbrook28.net</i>
*	*
*	*
*	*
*	*
School Name	<i>Northbrook Junior High</i>
School Street Address	<i>1475 Maple Ave.</i>
School City, State, Zip	<i>Northbrook IL 60065</i>
School Phone Number	<i>847-498-7900</i>
If you are providing information to nominate another teacher or group, please provide your information below (if different from those named above).	
Nominator's Name	
Nominator's Phone #	
Best Contact Time	
Nominator's Email	

Please attach the Project Summary to this form and send to Learning Technology Center One Central at 2701 W. Washington Blvd., 2<sup>nd</sup> Floor, Bellwood, IL 60104

## Larry Stilgebauer Technology Award 2010

### 1. **Project Descriptive Title** – Scratch Club

2. **Project Abstract** – Scratch club is an extracurricular activity designed for middle school students using the program Scratch. Students use problem-solving skills to program their own animations and playable games. Students also create a collaborative community of learners by use of a Moodle website and forum.

### 3. **Grade level(s)** – 6th-8th grade

4. **Subject area(s)** – Mathematics-based, but involves other areas depending on interest of students and design of project.

5. **Technology resources** – Scratch program and Moodle

6. **Other materials used** – N/A

### 7. **NETS**

1a. Students apply existing knowledge to generate new ideas, products or processes.

1b. Students create original works as a means of personal or group expression.

4b. Students plan and manage activities to develop a solution or create a project.

### **Illinois Learning Standards - Mathematics**

6.B.3a Solve practical computation problems involving whole numbers, integers and rational numbers.

7.A.3b Apply the concepts and attributes of length, capacity, weight/mass, perimeter, area, volume, time, temperature and angle measures in practical situations.

8.B.3 Use graphing technology and algebraic methods to analyze and predict linear relationships and make generalizations from linear patterns.

9.C.3b Develop and solve problems using geometric relationships and models, with and without the use of technology.

8. **Process** - The club is designed to motivate the student to learn more about computer programming and increase their skills in planning and problem-solving. Students have had various amounts of experience with Scratch and therefore need varying levels of support. In the beginning stages, students experiment with the possibilities of the program. As they develop a certain level of familiarity, I introduce new concepts, example programs and challenges that require students to put their skills together in new combinations. As students progress, they begin constructing their own video games or animations. A forum setup through a Moodle course allows students to share what they have created or ask questions about their projects. Their final projects for the club must have an educational purpose. Examples include a game for practicing a skill or introducing a topic. The games should reflect the interest of the student creator.

9. **Integration** – The technology present in Scratch requires students to adapt their thinking to a restricted environment. Although they might want one of their game's characters to jump when a button is pressed, Scratch does not have a "jump" command. Students need to apply the available commands to make their character jump. The program requires students to self-edit; they must look back at their program and determine what needs to be changed when there is a problem. Trial and error leads to new possibilities and a greater understanding of cause and effect. When students modify small parts of their program they view the outcome when testing their game.

The club takes place in the computer lab, which allows students to also be peer helpers. Through the Moodle course and forum, they can share projects and demonstrate to other members how their program works. In doing so, they deepen their own understanding of the programming process.

10. **Reflection** – I created the Scratch club after being exposed to it during a summer school Tech Facilitator position. I wanted students to experience the joy of creating something while challenging themselves. Because the Scratch program is so detailed it allows students to work at their own level; some students picked up new ideas quickly and integrated them in ways I hadn't expected. As more students become aware of Scratch I see its use in the classroom expanding. The program uses a lot of mathematical foundations: an x-y grid with coordinates, variables, modification of values using basic math operations. Aside from teaching particular skills, the program allows students to share their learning in a new format. Many of us understand the draw of Powerpoint presentations or creating a podcast. Students that are exposed to Scratch might wish to complete a project by creating a game that meets the same types of expectations as other multimedia presentations. I think that Scratch can always serve to enhance any problem-solving curriculum.